

WHAT IS CLAIMED IS:

1 1. A right angle attachment for a power hand tool of the type which has an
2 elongated generally cylindrical housing containing a motor having a motor output shaft
3 extending from a nose end thereof, the housing having a generally cylindrical nose end
4 portion that is concentric with said motor output shaft, said nose end portion providing a
5 structure on which said attachment can be mounted, said attachment comprising:

6 a housing having a mounting end and a distal end, with the mounting end having a
7 cylindrical opening sized to snugly fit on the nose end portion of the tool housing;

8 said housing having an input shaft journaled in bushings and having an engaging
9 recess at one end portion for engaging a drive shaft that is driven by the motor output
10 shaft, and an attached gear at the opposite end;

11 said housing having an output shaft journaled in bushings, said output shaft being
12 configured to rotate a tool attached to said distal end, and having a gear attached to its
13 opposite end portion ;

14 said input shaft gear engaging said output shaft gear at a generally 90 degree angle
15 so that said motor output shaft drives said accessory output shaft;

16 a magnet mounted on said output shaft and an electrical circuit mounted in said
17 attachment housing adjacent said magnet for producing power, said circuit including at
18 least one light producing device;

19 a lens in said housing adjacent said light producing device for admitting light to
20 the exterior of said housing toward a tool attached to said distal end.

1 2. An attachment as defined in claim 1 wherein light producing device
2 comprises at least one LED.

1 3. An attachment as defined in claim 1 wherein said electrical circuit
2 comprises a printed circuit board having conductive lines and circuit components
3 including at least one inductor attached thereto, said printed circuit board being in
4 sufficiently close proximity to said magnet so that rotation of said magnet causes the

5 magnetic field of the magnet to induce a current in said inductor for driving said light
6 producing device.

1 4. An attachment as defined in claim 3 wherein said magnet has at least two
2 poles and is generally in the shape of a ring that fits around said accessory output shaft.

1 5. An attachment as defined in claim 3 wherein said circuit comprises two
2 inductors and two LEDs connected in parallel with one another, said two LEDs being
3 connected such that the anode of one is connected to the cathode of the other, said
4 inductors being located at approximately the same radius relative to the axis of said
5 output shaft, but arcuately spaced from one another by approximately 90 degrees.

1 6. An attachment as defined in claim 1 wherein said lens has an elongated
2 narrow configuration angled toward the end of said attachment output shaft, the outer
3 surface thereof being generally coextensive with the outer surface of said housing, and
4 made of a transparent plastic material.

1 7. An attachment as defined in claim 1 wherein said attachment housing
2 mounting end further comprises a compression band extending generally around the outer
3 surface thereof and having a lever mechanism that can be moved between loosened and
4 tighten positions.

1 8. An attachment as defined in claim 3 wherein said printed circuit board has a
2 generally circular shape with a portion removed that extends from the center to the outer
3 periphery thereof, said portion having a width greater than said output shaft so that said
4 printed circuit board can be easily placed in said housing around said output shaft during
5 assembly of said attachment.

1 9. An attachment as defined in claim 1 wherein said distal end has a generally
2 cylindrical outer surface configured to receive a saw guard when a circular saw blade is
3 attached to said attachment output shaft.

1 10. An attachment as defined in claim 1 wherein said engaging recess is a
2 square recess.

1 11. A right angle attachment for a power hand tool of the type which has an
2 elongated generally cylindrical enclosure containing a motor having a motor output shaft

3 extending from a nose end thereof, the enclosure having a generally cylindrical nose end
4 portion that is concentric with said motor output shaft, said nose end portion providing a
5 structure on which said attachment can be mounted, said attachment comprising:

6 a housing having a mounting end and a distal end, with the mounting end having a
7 cylindrical opening sized to snugly fit on the nose end portion of the tool enclosure;

8 said housing having an input shaft journaled for rotation and having a recess at one
9 end portion configured to engage a drive shaft that is operably driven by the motor output
10 shaft, and a first bevel gear attached to the opposite end;

11 said housing having an output shaft journaled for rotation, said output shaft being
12 configured to rotate a tool attached to an exposed end portion, and having a second bevel
13 gear attached to its opposite end portion ;

14 said first bevel gear engaging said second bevel gear at a generally 90 degree
15 angle so that said motor output shaft effectively drives said accessory output shaft;

16 a magnet mounted on said attachment output shaft and configured to be rotated to
17 produce an alternating magnetic field;

18 an electrical circuit mounted in said attachment housing adjacent said magnet;

19 at least one inductive coil proximate said magnet in said circuit for generating an
20 electric current from said magnetic field;

21 at least one device in said circuit for producing light when electric current is
22 generated; and

23 a lens in said housing adjacent said light producing device for admitting light to
24 the exterior of said housing toward a tool attached to said exposed end.

1 12. An attachment as defined in claim 11 wherein said electrical circuit
2 comprises a printed circuit board having conductive lines and circuit components
3 including said at least one inductive coil attached thereto, said printed circuit board being
4 in sufficiently close proximity to said magnet that rotation of said magnet causes the
5 magnetic field to induce a current in said inductive coil.

1 13. An attachment as defined in claim 12 wherein said magnet has at least two
2 poles and is generally in the shape of a ring that fits around said accessory output shaft.

1 14. An attachment as defined in claim 12 further comprising two inductive
2 coils and two light producing diode devices, wherein said coils and devices are connected
3 in parallel with one another, said two diode devices being connected such that the anode
4 of one is connected to the cathode of the other, said inductive coils being located at
5 approximately the same radius relative to the axis of said output shaft, but angularly
6 spaced from one another by approximately 90 degrees.